

08A-5254-63

4 October 1963

Dear Ed:

As a result of the 26 September meeting on personal and life support equipment, actions to be taken by several contractors were defined. The problems, discussion, and action as related to LAC are as follows:

Problem: Oxygen consumption vs. ships supply.

Discussion and action: It was agreed that 25 liters per minute be accepted as a base line from which to compute duration vs. supply. Cockpit pressurization at 26,000 ft. will remain the same. A failure of one system at mission mid-point is possible and sufficient oxygen must be available for safe return on the remaining system.

By the end of November of this year the larger oxygen bottles, 1100 cu. in. vs. the present 875 cu. in., will be installed. These bottles will be charged to 2800 PSI vs. the present 2000 PSI.

When the larger bottles, charged to the higher pressure, are installed a mission of eight hours and fifteen minutes is possible with failure of one system at mission mid-point. This assumes a consumption rate of 25 liters per minute.

The possibility of charging the bottles to 3000 PSI will be pursued by Firewal Co.

Problem: Readability of ships oxygen pressure gauge.

Action: A top priority item for Firewal Co. to provide a gauge that can be read quickly and accurately. LAC may have to relocate the gauge to eliminate parallax error.

Problem: Oxygen Equalizer Valve

Discussion: This device is required to insure that both ships oxygen systems bleed down together. To date, Firewal Co. has not been able to produce an acceptable valve.

Action: Firewal will continue working on the problem and LAC will try their own approach.

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Problem: Neck Seal vs. Face Seal in full pressure suit helmet.

Discussion: Two LAC pilots and two of our pilots have suits with the neck seal. Flights will continue with these garments to gather additional information regarding oxygen consumption and comfort.

Problem: Ejection Seat D Ring.

Discussion: A new D ring configuration was mocked up and checked with subject pressurized. The subject was able to reach the D ring under pressure, however, the back up system D ring was barely reachable.

Action: LAC will improve back up system D ring.

Problem: Location of visor heat control.

Action: Although this control has been moved forward four inches, the subject could not reach it when the suit was pressurized. LAC will attempt to make the control more accessible.

Problem: Leg stretch

Action: LAC will provide new rudder configuration that will allow full leg stretch when desired.

Problem: Lap belt failure.

Discussion: A lap belt failure in an ejection seat test at El Centro prevented dummy and seat separation. LAC investigated the problem and found that the force required to shear the pin varied from 450 PSI to 850 PSI. This was caused by pin heat treat which ranged from 55,000 PSI UTS to 110,000 PSI UTS.

Action: LAC is replacing the presently installed shear pin with one which has a controlled heat treat of 55,000 PSI UTS to 66,000 PSI UTS maximum.

Problem: Oxygen pressure warning light.

Discussion: Pilots desire an oxygen pressure warning light to indicate low breathing pressure or possibly both low and high oxygen pressure.

Action: LAC will investigate.

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A meeting of headquarters representatives will be held early next week regarding the present parachute and the integrated harness. I will keep you informed on the decisions reached.

Regards,



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